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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Chikuni Kawakami

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EXAMINER

SUTHAR, RISHI S

ART UNIT

PAPER NUMBER

2862

NOTIFICATION DATE

DELIVERY MODE

07/21/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/759,421	Applicant(s) KAWAKAMI, CHIKUNI	
	Examiner Rishi S. Suthar	Art Unit 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10, 21-23 and 25-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10, 21-23 and 25-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is responsive to the amendment filed on 08 April 2008.

Claim Objections

1. The previous claim objections have been withdrawn in view of the amendments to the claims.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 5, 6, 10, 22, 23 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukasawa et al. ("Fukasawa", US 6,638,780) in view of Chen (US 4,914,731) and Sommers (US 2003/0180037).
4. Regarding claim 1, 6 and 23, Fukasawa discloses primarily in Figs. 2 and 5 a lighting apparatus comprising an LED light source mounted on a circuit board (24), and a single reflector (21) having a substantially rectangular shape in plan perpendicular to a light emitting direction of the LED light source, the reflector being formed independently from the reflecting surface and provided above the reflecting surface so as to surround the LED light source (12) and said reflector having an opened rear

Art Unit: 2862

thereof closed by the circuit board when mounted on the circuit board. Fukasawa does not expressly disclose a reflecting surface formed on the circuit board. Chen discloses a lighting apparatus comprising a reflecting surface (53) formed on a circuit board that is to be surrounded by a reflector. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a reflecting surface on the circuit board of Fukasawa as taught by Chen since the reflecting surface can increase the efficiency of the lighting apparatus by reflecting more light ahead. The combination of Fukasawa and Chen does not expressly teach the incorporation of the lighting apparatus into a camera as a flash device. It is conventional, as taught by Sommers, to use LEDs in cameras as flash devices. It would have therefore been obvious to one of ordinary skill in the art at the time the invention was made to use the lighting apparatus of the combination of Fukasawa and Chen in a camera since LEDs can operate more efficiently than conventional flash tubes.

4. While Chen discloses the use of a round reflector surrounding an LED (as opposed to the claim language reciting a rectangular reflector), it is noted that the rectangular shaped reflector is conventionally used in the art, as taught by Fukasawa. The addition of the reflecting surface on the circuit board can apply to any shape reflector that is placed above it, whether it is circular or rectangular, or any other shape. The shape of the reflector in this case therefore is not a patentably distinct feature.

5. Fukasawa does not explicitly disclose four curved reflecting surfaces (Fukasawa discloses flat surfaces). Chen discloses curved reflecting surfaces in Figs. 6 and 7. It has been known to use curved reflecting surfaces for reflectors. It would have been

obvious to one of ordinary skill in the art at the time the invention was made to use four curved reflecting surfaces, instead of the four flat surfaces as taught by Fukasawa, in order to obtain a desired convergence and/or divergence of illumination.

6. Regarding claim 5, the combination of Fukasawa, Chen and Sommers discloses an optical component placed on the reflector for expanding and flooding ahead the light emitted from the light source (see element 30 of Chen).

7. Regarding claim 10, the combination of Fukasawa, Chen and Sommers discloses that said LED has a lead terminal, and said lead terminal is put through a hole provided on said reflector and is joined with a predetermined pad of a circuit board (see both Chen and Fukasawa).

8. Regarding claim 22, the combination of Fukasawa, Chen and Sommers discloses that said reflector protrudes from said circuit board when mounted on said circuit board (see Chen and Fukasawa).

9. Regarding claims 26-28, the combination of Fukasawa, Chen and Sommers discloses that the LED light source includes only a single LED light source (single element 12 of Fukasawa, see Fig. 4).

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukasawa, Chen and Sommers as applied to claim 1 above, and further in view of Koay et al. ("Koay", US 2002/0047130).

11. The combination of Fukasawa, Chen and Sommers teach the invention as claimed above, except for the reflecting surface on the circuit board formed by gold

Art Unit: 2862

plating. Koay teaches that gold plating on circuit boards is a conventional method in light sources (Koay; paragraph [0011]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use gold plating in the invention of Fukasawa, Chen and Sommers as taught by Koay as it is conventional for improving the light reflection properties.

12. Claims 3, 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukasawa, Chen and Sommers as applied to claims 1 and 6 above, and further in view of Kitano et al. ("Kitano", US 2003/0216151).

13. Regarding claim 3, the combination of Fukasawa, Chen and Sommers teach the invention as claimed above, but except that the LED is a surface mounted white LED. Kitano teaches a LED light source which can use a white colored chip LED as the light source (Par. [0047], lines 2-4). It would be obvious to one of ordinary skill in the art at the time of applicant's invention to modify the light source of the above combination to use a white colored surface-mounted chip LED as taught by Kitano since it is conventional to use white surface mounted LEDs in lighting devices.

14. Regarding claims 4 and 7, the combination of Fukasawa, Chen and Sommers teach the invention as claimed above except for red, green and blue LED light sources. Kitano teaches an LED light source where the LED light source is comprised of three types of LED light sources for emitting red light (22a), green light (23a), and blue light (24a), and the LED light source for emitting the light in each color is radially placed as shown in Fig. 3. It would be obvious to one of ordinary skill in the art at the time of

applicant's invention to modify the light source of the above combination to use an RGB LED light source as taught by Kitano et al. so as to use the light source in order to provide a multi-color LED lighting display in a smaller space (Kitano et al., paragraph [0015]).

15. Claims 21, 25 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukasawa, Chen and Sommers as applied to claims 1 and 6 above, and further in view of Wu (US6,481,130).

16. Regarding claims 21 and 25, the combination of Fukasawa, Chen and Sommers teach the invention as claimed above, except for the circuit board defining a mounting hole and the reflector is provided with a claw extending directly from the reflector to engage the mounting hole. Wu teaches in Fig. 1B a claw (35) extending from a reflector and engaging a hole in the circuit board. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide claws to engage a hole in the circuit board in the invention of Fukasawa, Chen and Sommers as taught by Wu in order to provide a secure connection and proper alignment between the two components.

17. Regarding claim 29, the combination of Fukasawa, Chen, Sommers and Wu disclose the claw has a horizontal section (see Fig. 1B of Wu), and a vertical section extending from one end of the horizontal section and provided with a claw (at 35), wherein the vertical section extends inside the mounting hole (of 22) such that the claw engages with a rear surface of the circuit board (see Fig. 1B of Wu).

Response to Arguments

18. Applicant's arguments with respect to claims 1, 6 and 23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Telephone Numbers

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rishi Suthar whose telephone number is 571-272-8456. The examiner can normally be reached on M-F 8:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on 571-272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William B. Perkey/
for Patrick Assouad, SPE of Art Unit 2862

Rishi Suthar
Examiner
Art Unit 2862

RS
July 17, 2008